6. GYGIS CANDIDA.

This Tern was breeding in considerable numbers, laying its single egg on the bare branches of a *Pandanus* tree, without any nest whatever. The eggs, though much smaller, are in shape and markings exactly like those of *Anous stolidus*. Found on nearly all the low islands.

7. ANOUS MELANOGENYS.

This Tern also Mr. Arundel states is found on nearly all the low islands. He has brought home a nest, which is a large, slovenly, but rather solid structure of stems, leaves, and fibrous roots in the fork of a *Pandanus* tree, about the size and depth of a Missel-Thrush's nest. He did not succeed in finding the eggs.

8. ANOUS CÆRULEUS, Bennett.

This rare little Tern, which Mr. Arundel did not find breeding, was noticed also on most of the low islands, both north and south of the line.

IV.—*On the Birds of the Pamir Range*[*].

By N. A. SEVERTZOW.

THE fauna of the Pamir Range was studied, and zoological collections were made in it, by the author between the 24th October and the 6th November 1877, and between the 17th July and the 22nd September 1878.

I unite with the fauna of the Pamir that of the Alai, especially the Upper Alai (Bash-Alai), which, geographically speaking, is only a somewhat lower northern terrace of the Pamir.

---

[*] This paper was originally written in Russian by M. Severtzow, and translated into English in Moscow. After revision in this state by the author it was sent to Mr. Seebohm, with a request that he would put it into a condition fit for publication in this Journal. At Mr. Seebohm's request Captain Wardlaw Ramsay originally undertook this task, but, being unable to complete it from press of other matters, returned the paper unfinished to Mr. Seebohm, who has endeavoured to make it as perfect as possible, and has kindly supplied us with a certain number of editorial foot-notes.

On the eastern border of the central Pamir there is also a lower terrace, which, however, is not a continuous steppe, like the Alai, but is interrupted by mountain-ranges. On the southern side the Pamir is also bordered by the somewhat lower tableland of Chitral. On the west of the Pamir is Kohistan, a terrible entanglement of almost impassable mountains and gorges, which separates the valleys of Shignan, Roshan, and Darwaz. Still further away there is another terrace of the Pamir, consisting of the tableland of Wakhan and North-east Badakshan.

For the lower frontier of Bash-Alai we can take a line which goes from the northern end of the Kysil-art gorge, in the Trans-Alai range, to the mouth of the Katyn-art river (whence diverge to the north-east and north-west the roads leading to the passes of Artchat and Taldyk), across the Kysil-Su, the northernmost source of the Oxus. The Kysil-Su crosses this line at a height of about 10,000 feet.

Beneath this line the Alai steppe is mostly covered with feather-grass, *Stipa altaica* ; but above it the predominating grass is *Festuca,* with a slight mixture of feather-grass, which rises up to the highest points of the Alai steppe, up to the Taumurun pass, and is even seen in the Pamir proper.

The Taumurun pass lies between the two branches of the Kysil-Su river, the western of which flows towards the Oxus, and the eastern towards the Kashgar-Daria ; it is a flat intumescence of the Alai steppe, the topographic character and fauna of which continue unchanged on the higher parts of its eastern slope. In the steppe along the western branch of the Kysil-Su there is no sharp limit between the upper and lower Alai : the faunæ mingle very gradually ; and even the fauna of Bash-Alai does not change as far as the first groves of trees on the Kysil-Su, a little higher than Darant-Koorgan.

In the mountains a change in the fauna begins nearer to the frontier of Bash-Alai above indicated. Bushes of Artcha (juniper) appear in the gorges at Artcha Bulak, some fifteen versts (ten English miles) from Katyn-art, along with characteristic birds, which do not breed on Bash-Alai and the Pamir.

The Pamir can be called a plateau only because its valleys are of great altitude; they reach a height of 14,500 feet, and are nowhere lower than 12,000 feet. The average height of the Pamir mountains is from 15,000 to 17,000 feet; and they do not rise very high above the valleys. These valleys bear a steppe-like character; but none of them reach the width of twenty versts, like the continuous steppe of Bash-Alai. The main Pamir valleys have a breadth of from one to five miles; and the steppes which border the Pamir lakes are not broader. The secondary valleys are open, and not mere gorges; their breadth is from 150 sajen (about 1000 feet) to a mile or a mile and a half. At least four fifths of all the surface of the Pamir is not covered with high steppes, but with steep rocky mountains, the highest of which reaches 20,000 feet. On the north rises the Trans-Alai range; and on the western side tower the snowy mountains west of Kara-kul and Jeschil-kul. On the east there are two groups of snowy peaks eastward of Lake Ran-kul, of which the southern, Mustagh-ata, attains the height of 25,000 feet. It is the highest point of the Pamir range, of which the interior mountains are much lower than those situated on the outside. But on the frontier the high snowy mountains do not form uninterrupted chains, but alternate with lower peaks: even the most compact chain, the Trans-Alai range, presents the relatively very low depression of the Kysil-art pass.

On the northern slopes of the Pamir mountains perpetual snow begins at 15,000 feet; the southern slopes are free from snow in summer to the height of 18,500 feet. The valleys through which run the rivers that descend from the interior of the higher Pamir retain their steppe-like character down to about 12,000 feet, when the rivers enter into narrow gorges. The height of the Pamir valleys ranges from 11,000 to 13,500 feet.

The flora of the Pamir is principally formed of a striking mixture of grasses peculiar to steppes with the more varied grasses of higher ranges; the latter mingle also with the grasses of the steppes of Alai. But, besides grasses, the Pamir possesses some bushes, and even trees. In two places, near the river Ak-su and near Jeschil-kul, are found groves of white willows at the height of 12,500 feet, with trees 10, and even 15 feet high; and here and there, on different rivers, we found tamarisk-bushes (*Myricaria*?) growing as high up as 13,500 feet. In general the fauna and flora of the Pamir are richer than its severe climate would lead one to expect.

There are only ten or fifteen days in the latter part of July of the whole year which can be said to be free from frost at night; and in the month of August the frosts already reach −15°, and even −17° C. In the daytime the temperature is generally above zero, and when it is calm the thermometer rises to 12° and 15° C. in the shade, and to more than 20° C. in the sun; but such calm weather is rarely experienced, except in well-protected valleys, as, for instance, near Ran-kul and Bulum-kul in the Pamir Alichur. In most of the long valleys near Kara-kul, on the Alichur and elsewhere, strong winds are constantly blowing, which often increase to tempests. Sometimes even as early as August these winds bring down fine crisp snow. In September more snow falls, and there is frost both night and day. In October the waters—first the lakes and then the rivers—begin to freeze. The ice on the latter begins to break up at the end of April, and on the lakes at the end of May; but the weather is still very cold in June, and snow often falls during that month. The snow that falls in spring and summer melts very rapidly, and waters the vegetation of the Pamir. Rain is very rare, and falls only in the valleys which lie below 13,000 feet. The spring lasts two months and a few days—May, June, and the beginning of July; the pure summer, without frosts, lasts about two weeks, but frequently less, and three weeks at the very most. The autumn lasts about as long as the spring—August, September, and the beginning of October—after which come seven long months of winter, to which may perhaps be added, especially in the upper valleys above 14,000 feet, two months, one in late autumn and the other in early spring.

In most winters there is not a great quantity of snow, but the frosts are very hard. The snow, however, on the southern slopes melts by day in sunny places throughout the winter, and in many places it is blown off by winds, so that during this season a considerable extent of uncovered pasture-land is to be seen. It is here that the Kirghiz have their winter camps, notwithstanding the severe frosts and tempests*.

The greatest amount of snow falls on the Pamir in February, March, and April, and affords means for an abundant watering of the flora when it thaws. The seasons are distributed in pretty much the same way on Bash-Alai, only that the snow falls in much greater quantities in the late autumn and winter, and in spring begins to melt earlier than on the Pamir, because the Alai lies lower; but, owing to frequent falls of snow in June, it does not disappear any earlier than on the Pamir. Rain is also frequent in summer.

The time when the Kirghiz remove their camps to the summer pasture-grounds on the Alai depends upon whether the spring is early or late. It is generally about June; but in 1878 it was not before July. The lower Alai is decidedly warmer.

Such is a brief sketch of the conditions of animal life on the Pamir and the Alai steppe; and I now proceed to treat of the birds of this district in systematic order.

1. GYPS HIMALAYENSIS, Hume.

The Himalayan Vulture (*G. nivicola*, Sev.) is a rather rare bird, but still it is found in all parts of the Pamir; I saw it more frequently near the river Ak-baital. It is also found in the North Alai mountains.

2. GYPAËTUS BARBATUS (Linn.).

The Lämmergeyer lives in the same parts of the country as the preceding. In September 1878 these birds were seen in groups of six or seven, picking up bones in the forsaken camp of the Alai detachment; they catch hares and marmots, of which I found the remains in their stomachs; and they also feed on carrion.

---

* As to the summer and autumn, I speak from my own experience; but my statements as to winter are derived from the accounts of Wood and Mirza, and as regards the spring from Gordon. Besides these authorities, I have the verbal statements of the Pamir Kirghiz.

3. HALIAETUS LEUCORYPHUS, Pall.

Pallas's Sea-Eagle is often seen near the Pamir lakes in August, also near Kara-kul, Ran-kul, and Jeschil-kul, where some old birds and a young one (three years of age) were shot. The old birds do not breed every year, but only every second year, in the same manner as *Gypaëtus barbatus* and the large Vultures. In the year in which they do not breed they moult in June, and lead a migratory life until winter, during which period many are seen on the Pamir.

4. BUTEO FEROX (Gmel.).

The Long-legged Buzzard feeds on the different *Arvicolæ*, which are common on the Pamir and innumerable on the Alai. It was seen near Ran-kul in July and August; but I do not know where it breeds. The dark variety of this species (*B. aquilinus*, Hodgs.) is also common enough.

5. MILVUS ATER (Gmel.).

The Black Kite was seen near the camp of the Alai detachment on the Bash-Alai in July.

6. FALCO HENDERSONI, Hume.

Hume's Saker was obtained on the Alai at the entrance of the Kysil-art gorge; it was also seen on the Pamir. The stomach of the specimen I got contained field-mice (*Arvicola*). This species probably breeds here *.

---

* I have since found in my collection a young female of *F. hendersoni*, shot on the 11th August on the tableland near Lake Sairam-kul, north of Kuldja, at about 7000 feet, in the Tian-shan system. I have also been informed that it was observed on the Yulduz tableland at 8000 to 9000 feet, which also belongs to the Tian-shan system. Combining my observations and information with those of Colonel Prjevalsky, I find that *F. hendersoni* is generally spread over the tablelands of Central Asia.

7. Falco peregrinus, Tunst.

The Peregrine Falcon migrates through the Alai and Pamir in a southerly direction in September.

8. Falco æsalon, Tunst.

The Merlin was seen at the end of July in the Bash-Alai. It probably breeds in the North Alai range. I found it breeding in the mountains near Vernoiè in June 1879, and obtained for my collection a pair, male and female, with three nestlings, which all died soon, though fed on freshly shot small birds only, which they ate greedily, and which was the food given them by their parents. They were taken too young, only just out of the egg. Vernoiè (43° N.) and Ferghana (39° 45′ N.), on the north Alai range, are unusually southern, although alpine breeding-places. The nest near Vernoiè was on a pine (*Pinus schrenkiana*) at a height of 8000 feet above the sea.

9. Falco tinnunculus (Linn.).

The Kestrel is often seen in summer on the Pamir and Alai. It comes after the broods of young birds, and is also probably attracted by the great quantities of *Arvicolæ*, which offer it a copious supply of food.

10. Circus æruginosus (Linn.).

The Marsh-Harrier is found during its migration near the Kara-kul in the beginning of September. It was also seen near Ran-kul in the middle of August; probably young ones come to the Pamir in summer.

11. Circus cyaneus, Linn.

The Hen-Harrier was seen in September during its migration near the Kara-kul lake, and was found on the Alai. Birds of this species, especially immature, are rather common in this part of the country.

12. Scops giu (Scop.).

Very few Scops Owls were seen, and those at the end of August during their migration through the Pamir.

13. Bubo turcomanus, Eversm.

Eversmann's Eagle-Owl is probably a resident. A young one was shot near Ran-kul in August.

14. Asio brachyotus (Lath.).

The Short-eared Owl was seen in October on the Bash-Alai.

15. Corvus corax, Linn. (var. *C. tibetanus*, Hodgs.).

The Raven is common enough throughout the Pamir, and was seen there in summer and autumn. It is probably a resident; but it may be presumed that being an early-breeding bird, it descends in winter to lower elevations.

16. Corvus orientalis, Eversm. (*C. corone* part. auct.).

Some specimens of the Carrion-Crow were seen near the Jashil-kul and on the river Ak-bai-tal at the end of August.

17. Corvus cornix, Linn.

The Hooded Crow only migrates through the Pamir in October.

18. Pyrrhocorax graculus, Linn.

The Chough is found here and there on the Pamir mountains, and is common in the Kysil-art gorge; it breeds there, and probably also sometimes winters on the Pamir. I found still numerous in October.

19. Pica leucoptera, Gould.

The eastern form of the Magpie was often found in the Kysil-art gorge in October, and more rarely on the whole Pamir range in August.

20. Sturnus purpurascens, Gould.

A specimen of the Purple-winged Starling was procured during migration at the south of the Kysil-art in October.

21. Pastor roseus, Linn.

Young Rose-coloured Starlings straggled near Kara-kul at the beginning of August 1878, when a large flight of locusts arrived, ascending the Kashgar Darya from Eastern Turkestan.

22. Oriolus kundoo, Sykes.

The Indian Oriole was seen during migration near the river

Kara-su and on the Pamir Alichur in the second half of August. It is common.

23. CARPODACUS ERYTHRINUS (Pall.).

The Scarlet Grosbeak was seen at the same time throughout the whole Pamir.

24. CARPODACUS MONGOLICUS, Swinh.

Erythrospiza incarnata, Sev.

This Rose-Finch breeds on rocks in the North Alai range, and throughout almost the whole region. In the middle of August the young were only just able to fly; and the old birds moult in September, when they hide themselves. I saw them most frequently on the Alai and in the Pamir, and occasionally throughout the whole Tian-shan. Prjevalsky found them in Ordoss, on the river Hoang-ho, and along the southern borders of the Mongolian plateau, whence came Swinhoe's type specimens. The eastern limit of this species is near the meridian of Pekin. It inhabits the woodless rocks and the steep ravines of the plateaux. In Turkestan this bird belongs in summer to the upper alpine region, and lives above the highest limit of the tree-vegetation, but goes a little lower to breed. It stays on the heights in autumn as long as possible, in fact until the snow drives it down; but even then only a very few descend to the cultivated regions, where I shot them in October near the river.

This species is a very near relative to *C. githagineus*, a bird known and described long ago, which lives in the more southern deserts and is found from the Canary Islands, through the northern Sahara, Egypt, north of Arabia, Persia, and Beluchistan to Sindh. M. Fedchenko, having found *C. mongolicus* in the mountains of the Lower Alai, mistook it for the true *C. githagineus*, and insisted on the strange occurrence of such a characteristic type of the Saharan fauna in the Alai mountains. He disputed my specific separation of *C. mongolicus* (under the name of *E. incarnata*) from *C. githagineus*, and referred to the authority of Cabanis, who told him that both birds were of the same species. But this is an error. When I got the first specimens of *C. incarnatus* I thought myself, at the first glance, that they were *C. githagineus*; but after thoroughly comparing them I saw the specific distinction. Cabanis, as he told me himself, was led into the same error, and mistook my *C. incarnatus* (*C. mongolicus,* Swinh.) for the Saharan species; but we examined them together, and he then acknowledged their distinctness, which the English ornithologists also admit. I have been able to examine many specimens of *C. mongolicus* found in different parts of Turkestan and Mongolia, and I am now firmly convinced of the constancy of their specific distinction throughout the whole region where they reside. I have also compared my specimens (found near Keleso and Tianshan) with Swinhoe's type specimens, and found them identical. When compared with specimens of *C. githagineus* taken from various museums and obtained in various countries, the following differences are always apparent:—

C. mongolicus.	*C. githagineus.*
Maxilla yellowish brown. Mandible pale yellow.	Maxilla and mandible reddish orange, deepening to coral-red with age.
Occiput, back, and scapulars reddish-grey ground-colour, with numerous shaft-spots. These spots more marked in spring.	Occiput, back, and scapulars without shaft-spots; but the feathers have a rose-coloured shading, which is more marked in spring, especially at their tips.
Wing: Great wing-coverts and the secondary quills white on two thirds of the length of the outer web, bordered with rose-colour or, in spring, vermilion; so that the wing has two white patches, with long red streaks.	Wing: All the feathers greyish brown, with rose-coloured borders, but without any white on the outer webs. The white patches on the wing are therefore wanting.

25. LINOTA BELLA, Ehrenberg.

Linota fringillirostris, Bp.

Ehrenberg's Linnet has not yet been seen in the Bash-Alai, nor in the Pamir proper; but probably it is to be found there, at least during migration. This supposition is confirmed by the fact that these birds were found near the Karakasyk pass (14,200 feet), which leads from Ferghana to the

Lower Alai, and also in the mountains between the rivers Kashgar Darya and Tara, high up in the juniper region.

26. LINOTA BREVIROSTRIS, Gould.

The Eastern Twite breeds near the Tan-murun pass; the nestlings had flown at the end of July. We obtained mature birds in July near the source of the river Irkestan, above the juniper region in the Pamir system.

27. LEUCOSTICTE BRANDTI, Bp.

Brandt's Snow-Finch is found on the Kysil-art pass and south of it in the Pamir; it breeds there. In summer these birds live on mountains 12,000 to 14,000 feet high, but are more scarce on the Pamir and neighbouring mountains than the following.

28. LEUCOSTICTE PAMIRENSIS, sp. nov.

I give here comparative descriptions of this species and its two nearest allies.

Leucosticte pamirensis, mihi.

Capite, collo postico et cervice nigricantibus; remigibus primariis et rectricibus nigro-fuscis albicante limbatis; remigibus secundariis cano-fuscescentibus, versus apicem nigricantibus, pallido fulvescenti marginatis; ceterum tota dilute canescenti-cinerea; hieme apicibus plumarum plerumque fulvescentibus; uropygio saturatius cinereo, marginibus totis apicalibus omnium plumarum hieme roseis, æstate coccineis; tectricibus minoribus alarum, etiam hieme roseo, æstate coccineo marginatis. *Femina* marginibus tectricum alarum et uropygii paululum dilutioribus, ceterum mari simillima: pedes atri; rostrum æstate atrum, hieme flavum, apice fusco.

Long. tot. 7·2–7·4, alæ 4·3–4·5, caudæ 3″.

+ *Leucosticte brandti*, Bp.*

Præcedenti similis, sed marginibus roseis uropygii nullis; uropygio hieme fulvo-rufescenti marginato: æstate unicolor cinerea, tota, vel singulis plumis, perpaucis, 2–3 maculis apicalibus parvis irregularibus coccineis notata:

---

* *L. gebleri*, Brandt, 1843, nec Brandt, 1841, quæ *L. arctoa*.

tectricibus minoribus alarum in mare roseis, in femina fulvo-rufescente limbatis. Femina a mare semper distinctissima, præcedentis feminæ simillima.

+ *Leucosticte hæmatopygia*, Gould.

Præcedenti similis, sed uropygio toto roseo, apicibus plumarum coccineis; tectricibus minoribus alarum cinereis, rubedine marginali nulla; maculis scapularibus dorsi fuscis latissimis. Femina mihi ignota. (Spec. typ. in coll. Gould.)

Hab. High alpine regions of Tibet generally.

I compared in London, in 1875, my specimens of *L. brandti* with the type of *L. hæmatopygia*; and more recently I have compared a large series of *L. brandti* and *L. pamirensis*, which I discovered during my last expedition, and which is intermediate between the first two, both in colouring and in geographical range.

The most northern of the three is *L. brandti*, which inhabits the alpine zone of the whole Tian-shan system up to the perpetual snow, descending in winter to the sunny rocks, not below 5000 feet, and feeding there upon seeds. It also inhabits the northern parts of the Pamir system, the Alai and the Trans-Alai ranges, reaching its southern limit near the Karakul lake.

L. pamirensis was found throughout the whole Pamir system, as far as I visited it, also on the snowy peaks south-east of Ferghana, between the Tian-shan and the Pamir, and on the crags on the tablelands of southern Tian-shan, but only south of the Naryn river. On the southern Tian-shan it is much scarcer than *L. brandti*, as this last is scarcer than *L. pamirensis* on the northern Pamir. In the winter *L. pamirensis* does not descend in the mountains of South-east Ferghana lower than 6500 feet, and not until the middle of November. I found it still at the top of the Kysil-art pass at the end of October; and I think that they may winter on snow-free places on the southern slopes of the Pamir ranges as high as their summer haunts.

The last species, *L. hæmatopygia*, inhabits the high alpine regions of the whole of Tibet, ranging perhaps into the Tagdumbash Pamir, which I have not visited, but not into the inner parts of the Pamir system which I explored.

L. pamirensis is found in summer up to a height of 15,000 feet. It breeds on the Pamir; and I got nestlings just fledged. It is found till the end of August in families, and in September, after moulting, congregate into flocks, out of which, on the Kysil-art, I sometimes shot both species, viz. *L. pamirensis* and *L. brandti*, at once.

29. MONTIFRINGILLA ALPICOLA, Pallas.

Pallas's Snow-Finch is closely allied to *M. nivalis* of Europe, which it represents in the mountains of Western and Central Asia. *M. alpicola* does not ascend so high as *Leucosticte*; it is very common, and breeds on the Bash-Alai, but was not found in the upper parts of the Pamir. In summer it inhabits a zone between 9500 and 12,000 feet above the sea, while the *Leucosticte* in the Pamir system is never seen lower than 11,500 feet.

Birds of this genus were seen, but not obtained, in the mountains between Ak-su and Alichen on the 31st August; they were very cautious, and did not allow a near approach with a gun. They disappeared among the inaccessible rocks. Perhaps these birds were the *M. adamsi* of Gould.

30. FRINGILAUDA ALTAICA, Eversm. (*F. sordida*, Stol.)

The Altai Lark-Finch is found in the mountains between the sources of the Kashgar-Darya and Yara, ascending higher than the juniper region; it was also seen in the Alai mountains above the same region; it was not met with in the Pamir, but is probably to be found there.

31. EMBERIZA LUTEOLA, Sparrm.

The Chestnut-headed Bunting was got during migration near the Kara-kul; they were partly in winter and partly in summer dress.

32. EMBERIZA PITYORNIS, Pallas.

A specimen of the Pine-Bunting was obtained out of a small flock in the Kysil-art gorge, which had lost its way, in October.

33. Emberiza huttoni, Blyth.

Hutton's Bunting passes through the Pamir in great numbers at the end of August.

34. Emberiza, sp. nov. (?)

An intermediate form between *E. hortulana* and *E. huttoni*, which appears to me new, but needs still closer examination and comparison with *E. schach*, Bp., and immature *E. hortulana*. My Pamir specimen, a female, was shot between the rivers Ak-su and Alichur on the 31st August, during the migration of *E. huttoni*. I have, besides, a male and female from the Hangai range, near Oolias-sutas, in Mongolia, where this bird breeds, and perhaps some other specimens shot in different parts of Turkestan during the migration-time, which I determined at the first glance as varieties of *E. hortulana*.

35. Calandrella brachydactyla (Leisl.).

Some specimens of the Short-toed Lark, or a near relative of it, were found on the Pamir Alichur at the end of August. They had moulted, which fact favours the supposition that they breed there.

36. Otocorys elwesi, Gould.

The characteristics of Elwes's Shore-Lark lead to the supposition that it is the common ancestor of all the species of *Otocorys*. It lives in Tibet and on the Pamir and Tianshan tablelands, where it breeds.

In the Pamir a subspecies with a rather long beak predominates; but this difference is neither considerable nor constant.

37. Otocorys penicillata, Gould.

(*O. bicornis*, Ehrenb.; *O. scriba*, Bp.)

I established the identity of this bird with Gould's Shore-Lark from a comparison of all my Tian-shan specimens with the original specimens of Hemprich, Gould, and Brandt. The type of Bonaparte's *O. scriba* was from Gould's collection, and was obtained by Mr. Dickson near Erzeroum.

This bird is most frequent in the Alai; it is also often seen in the interior of the Pamir; but in the latter region *O. elwesi* predominates, which is very rare in the Alai steppe. It is a mountain species, and was found by Hemprich and Ehrenberg on the mountains of Lebanon, and more lately has been observed and obtained by many travellers near Erzeroum and beyond the Caucasus. I saw this bird in all parts of the Tian-shan, Alai, and the Pamir; and the members of the Forsyth mission collected it in Western Tibet.

38. Anthus contelli*, Audouin.

This eastern representative of the Water-Pipit, *A. spinoletta*, differs from that species in very constant though (as in the whole genus) not very considerable characters, which I have verified by examination of a very large series of Central-Asiatic specimens.

I give here comparative diagnoses of the two species:—

Breeding-Plumage.

A. contelli.	*A. spinoletta.*
Superciliary streak light rufous.	Superciliary streak white.
Abdomen and lower tail-coverts rufous, only somewhat lighter than the breast.	Abdomen and lower tail-coverts white.
Breast pure rufous, inclining to fulvous.	Breast rufous, inclining to a violet tinge.
Crown rufous grey.	Crown pure grey.
Outer rectrices with cuneiform markings pale fulvous.	Outer rectrices with cuneiform markings pure white.
Feet black.	Feet brown.

Winter Plumage.

Characterized only by large shaft-streaks on the breast and flanks, the lower parts otherwise as in breeding-plumage.	As in *A. contelli*, but the ground-colour of the breast much paler than in breeding-plumage, being very pale fulvous, the throat, abdomen, and lower tail-coverts pure white.
The whole throat unspotted fulvous.	Chin and throat white, the former unspotted, the latter with dark shaft-streaks.

---

* [Mr. Seebohm assures us that this Pipit is undoubtedly the *A. blakistoni* of Swinhoe, of which *A. neglectus* of Brooks is a synonym. *A. contelli* of Audouin is probably =*A. spinoletta*, Linn.—Edd.]

The young *A. contelli*, in its first winter's plumage, has its underparts as pale as *A. spinoletta*; but the throat, abdomen, and lower tail-coverts are always of the same ground-colour as the breast.

These differences are greater than between *A. maculatus*, Hodgs. (*A. agilis* auct. nec Sykes) and *A. arboreus*.

In the Pamir system *A. contelli* breeds in brooks and brook-swamps of Bash-Alai and the mountain-valleys opening into it from both ranges, north and south, but was not observed in the inner Pamir, south of the Trans-Alai range.

39. ANTHUS MICRORHYNCHUS*, Sev. (See Ibis, 1876, p. 180.)

This species is closely related to *A. arboreus*, but has a much smaller bill, and differs in some slight details of colouring; but when we consider its mode of life, we are compelled to see in this bird the common ancestor of two European species, viz. *A. arboreus* and *A. pratensis*. It is rather common on the Pamir at the end of August, in the high grass, and is also found in grassy places which are treeless or with only a few scattered shrubs throughout the whole of the mountains of Turkestan. It has the small thin bill of *A. pratensis*, with the short hind claw of *A. arboreus*; but some few specimens exhibit a series of intermediate measurements between the typical short-clawed specimens and *A. pratensis*. In size and colour also it is intermediate between *A. arboreus* and *A. pratensis*, which two, however, only differ *inter se* in the shades of the olive-brown upper and fulvous-white lower surface.

40. BUDYTES CALCARATA (Hodgs.).

Hodgson's Yellow-headed Wagtail breeds in great numbers everywhere in the Alai, the Pamir, and near the sources of the Kashgar-Darya; the male has a yellow head, like *B. citreola*, but differs from it in its back, which is of a black colour down to the rump and upper tail-coverts. Some traces of this black are also to be seen on the female.

---

* [Two examples of this species in Mr. Seebohm's collection are (as we are informed by him) undistinguishable from our European *A. arboreus*.—EDD.]

Soon after the young have flown they congregate in families and commence to moult, when they throw off their nest-plumage and assume their first autumn's garb, which greatly differs from that of the adults. In the plumage of the first winter they are without any yellow colour. Soon after the moult the families collect in flocks and migrate, the old birds being still in their breeding-plumage, only a few having assumed their winter dress. The majority of the young birds migrate along with the old ones; but some migrate separately a little later. These are probably fledgelings of later broods, and are seen throughout the whole Pamir, even at the end of August, in parties of two to five, flying very slowly from one swamp to another, gradually seeking their way.

BUDYTES FLAVUS?

This bird was seen, during its migration, in the Pamir Alichur early in the morning. I could not obtain a specimen. I noted that the birds had grey heads, green backs, and yellow breasts; but I cannot be certain whether they were true *B. flavus* or *B. cinereocapillus*.

MOTACILLA MELANOPE, Pall.

The eastern form of the Grey Wagtail was found in the Pamir Alichur at the end of August. It is a resident in Turkestan generally, and ascends in summer high up into the mountains, and winters down in the cultivated districts. Probably it breeds in the Pamir, but not commonly.

41. MOTACILLA PERSONATA, Gould.

Gould's Grey-backed Wagtail was not observed at all, either on the Alai or Pamir, until the end of August and first days of September, when many specimens were obtained. It flies in pairs. Some individuals winter in Ferghana.

42. ACCENTOR FULVESCENS, Sev.

This Accentor breeds in the Alai mountains and in some parts of the Pamir; the young were found near Ran-kul at 12,000 feet in the middle of August; and they were common near the sources of the Kashgar Darya, between 11,000 and 13,000 feet, at the end of July.

43. Accentor altaicus, Brandt.

Old and young birds, congregated in flocks, of the Himalayan Accentor were seen in the Kysil-art gorge at the end of July. The old birds were moulting.

44. Locustella locustella (Linn.).

The Grasshopper Warbler was found at the beginning of August near Kara-kul, where it probably breeds. Observed on the Bash-Alai in the middle of September during its migration.

45. Locustella straminea, Sev.

I am still uncertain about the determination of this species*. It was found at the end of July on brook-swamps near the mountain-pass between the Katir-kul and Kara-kul in the northern range, at the height of nearly 15,000 feet. It probably breeds there.

46. Acrocephalus agricola (Jerd.).

Salicaria capistrata, Sev.

Specimens of this Reed-Warbler were obtained near Tanomurun in the second half of July and early in August, and it was seen on the Kara-kul and the southern Ak-bai-tal (13,000 feet). It was also found at 11,000 feet at the end of July near the source of the Kashgar Darya. It lives in the grass. It winters in the Punjab and Sindh, but in summer is spread both over the cold Pamir range and the warm parts of Turkestan, on the grassy slopes of Karan-tau, where *Locustella locustella* also occurs.

47. Acrocephalus dumetorum (Blyth).

Blyth's Reed-Warbler migrates through the Pamir in August.

---

* [The Siberian Grasshopper Warbler is a good species, and has erroneously been called *Locustella hendersoni*, Cass., by Dresser and other ornithologists (see Seebohm, Cat. B. Brit. Mus. v. p. 117). Mr. Seebohm considers the Pamir bird to be also referable to this species. He has examples in his collection obtained from Severzow.—Edd.]

48. **Acrocephalus ilensis**, sp. nov.*

This is an intermediate form between the East-European *A. dumetorum*, Blyth, and the western *A. streperus*, Vieill. It is found in summer on the Ili and in Ferghana. In August it appears in small numbers in the Pamir.

49. **Hypolais caligata**, Licht.

Breeds in the Bash-Alai and near the sources of the Kashgar Darya, where it was found in July; in August it migrates through Central Pamir.

50. **Phylloscopus pseudo-borealis**†, Sev.

Collected on the Pamir during its migration in August; also found breeding in the mountains of northern Ferghana north-east of Namanghan, and since received from various parts of the Tian-shan system, eastward as far as the Upper Ili. While collecting I mistook this bird for *P. borealis*, Blas., to which it is very closely allied, differing particularly in having a much longer first primary, which is about ·6″. The second primary equals the seventh, rarely a little longer or shorter. In the primary quills, and them alone, it agrees with *P. viridanus*, Blyth, and *P. plumbeitarsus*, Swinhoe; but all its other characters, such as size, proportions, bill, and colouring, are those of *P. borealis*.

Having now compared considerable series (though not all my specimens), I find that, at any rate, the differences between my *P. pseudo-borealis* and both *P. viridanus* and *P. plumbeitarsus* are much greater than those between the two last named. Some of my specimens of *P. plumbeitarsus* were determined by Mr. Seebohm during his last visit to Moscow; and my specimens of *P. viridanus* have been compared with one of Mr. Brook's typical Indian specimens, which I received from Mr. Dresser.

---

* [Mr Seebohm has examined examples of this supposed new species, and considers them to be *A. dumetorum* in autumn plumage. They agree with that species in wing-formula, and are undistinguishable from Indian examples shot in September.—Edd.]

† [Two examples in Mr. Seebohm's collection are identified by him as *P. plumbeitarsus*, somewhat above the average size, but not larger than examples from Pegu.—Edd.]

51. Phylloscopus viridanus, Bl.,=*P. middendorffii,* Meves, var. *intermedia,* Sev.

52. Phylloscopus plumbeitarsus, Swinh.,=*P. middendorffii,* Meves, var. *hypolaina,* Sev.

I did not distinguish the Indian Willow-Warbler from Middendorff's Willow-Warbler while collecting, and therefore cannot now give a complete notice of their geographical distribution; but on the Pamir I noticed very characteristic specimens of both. They are found on migration in the second half of August throughout the Pamir. Some appeared to me to have bred on the Pamir near Lake Ran-kul, and also on the upper Kashgar-Darya, where I found them in July above the limit of vegetation.

I may mention here, incidentally, that I have found a specimen of true *P. viridanus* among my series of *Phylloscopus,* shot by me in May 1861 during migration at the mouth of the Ural river.

53. Sylvia nisoria, Bechst.

The Barred Warbler was obtained in August near Lake Ran-kul during migration.

54. Sylvia curruca, Gm.

The Lesser Whitethroat is found throughout the whole Pamir during migration from as early as August to October, when they frequent the neighbourhood of the river Kok-su, at the southern foot of the mountain-pass of Kisil-art.

55. Sylvia minuscula, Hume.

Hume's Lesser Whitethroat is a near relative of the preceding species. It is not larger than a Willow-Warbler (*Phylloscopus*), and breeds in great numbers in the Ferghana, where the true *S. curruca* is seen only in migration.

Obtained in migration in the beginning of September at the foot of the Artcha pass, in the Alai.

56. Calliope pectoralis, Gould.

The Indian Ruby-throated Robin belongs to the region of the upper junipers, and is sometimes seen in the Pamir during migration. It was obtained near the source of the Tchon-su, in the river-system of Lake Kara-kul, in August, at a height of 14,000 feet.

+57. Cyanecula suecica (Linn.).

The Arctic Blue-throated Robin is common on the Alai in July and in August, near the sources of the Kashgar-Darya, and throughout the Pamir, where it was obtained moulting. It probably breeds there.

58. Ruticilla rufiventris, Vieill.

The Indian Redstart is an autumn visitant in the Pamir, arriving in August and disappearing in October.

59. Ruticilla erythrogastra, Güldenst.

Güldenstädt's Redstart is found on passage through the Pamir in September and October; the earliest arrivals of this species are seen in the first half of September.

60. Monticola saxatilis (Linn.).

The Rock-Thrush passes through the Pamir in August. It is not common; but perhaps it may breed there.

61. Monticola cyanus (Linn.).

The Blue Rock-Thrush was seen during migration on the 13th September near Ak-su.

62. Saxicola isabellina, Rüpp.

The Isabelline Chat is very common in the Alai and the Pamir, where it breeds. It ascends as high as the *Leucosticte* in the upper alpine zone. The young birds on the Alai retain their nestling-plumage till the end of July, and on the Pamir even till the end of August—a conclusive proof that this species breeds there; the higher they live the later they retain it. This species appears quite to replace *S. œnanthe* in the Alai and the Pamir. In the narrow-ridged chains of the Tian-shan system *S. œnanthe* ascends into the alpine region far above *S. isabellina*, which there only reaches the treeless outskirts of this region, whereas in the Pamir it ascends to a far greater height. Specimens of *Saxicola isabellina* from the Pamir do not differ from those inhabiting the hottest steppes of Egypt, the northern Sahara, and the neighbourhood of the Sea of Aral.

63. SAXICOLA DESERTI, Rüpp.
Saxicola montana, Gould.
Saxicola salina, Eversm.

The Kirghiz Desert-Chat, *S. salina,* differs from the North Sahara species, *S. deserti,* only in the rather greyer colour of its back. *S. montana** differs from *S. salina* only in being a little lighter and slightly larger, and in the black of the throat not descending so far on the breast; but all these characters are trifling and not constant. Gould got his specimens of *S. montana* from Western Tibet. I found many in the Pamir, where they probably breed. It was not seen in the Alai.

64. SAXICOLA LEUCOMELA, Pall.
Saxicola pleschanka, Lepech.
Saxicola hendersoni, Hume.

The Siberian Pied Chat was got during its migration in the Kysil-art gorge on the 20th September.

65. SAXICOLA MORIO†, Ehr.

Was obtained during its passage through Pamir and Alai at the end of August and beginning of September, and is much more abundant than the last species. I may here observe that this species and the last differ in their black tail-markings, and also in their geographical distribution. The northern limit of *S. leucomela,* Pall., is a line from the middle Volga to the eastern Tian-shan, and its southern one from the Caspian Sea to Yarkand and Western Tibet, whilst the northern limit of *Saxicola morio* runs from Asia Minor to Lake Baikal.

---

* According to Mr. Seebohm the true *S. montana* differs principally from *S. deserti* in having the basal half of the inner web of the primaries and of the adjoining five secondaries white to the shaft. See Cat. B. Brit. Mus. v. p. 385.—EDD.]

† [Mr. Seebohm has examples of both this bird and the preceding obtained direct from Severtzoff, but is unable to detect any difference between them.—EDD.

66. Pratincola indica, Blyth.

The Siberian Stonechat was seen frequently in August in all parts of the Pamir. It probably breeds there. The difference between this species and *P. rubicola* was confirmed and found constant in more than three hundred specimens.

67. Turdus mystacinus, Sev.*

This Thrush passes through the Pamir in October.

68. Lanius isabellinus, Ehr.

The Isabelline Shrike is rarely seen on the Pamir, and then only during migration. Two young specimens were obtained, one on the 8th August in the gorge of Kisil-art, the other on the 12th September near the river Aksu, in the inner Pamir.

69. Muscicapa grisola (Linn.).

The Spotted Flycatcher is frequent in all parts of the Pamir in August during migration.

+70. Hirundo rustica, Linn.

Swallows appear towards the end of August, and pass through uninterruptedly till the end of September. When the weather on the Pamir is bad Swallows return to Gulcha along the Kurshab river, and, flying over the mountain-passes, appear on the roads near Osh in Ferghana. Probably these are young birds seeking the way to their winter quarters. One of these birds flew into a traveller's sledge in the Zaalai chain in the middle of September 1878. It followed his baggage-train daily, and at night sought shelter in the sledge, as far as the Taldit pass. Three others joined it *en route*.

71. Chelidon urbica (Linn.).

Martins were observed migrating in small parties through Pamir in the latter part of August.

72. Cotile rupestris, Scop.

The Crag-Martin was seen on migration, like the last, late in August. Families of these birds were seen in July near the sources of the Kashgar-Darya and in the mountains of Alai. They probably breed at a lower elevation, and ascend these heights as soon as the young are able to fly.

---

* [= *T. atrigularis*, Temm., fide Seebohm, Cat. B. vol. v. p. 268.—Edd.]

73. Cypselus apus, Linn.

The Swift was seen on migration, like the two preceding, at the end of August.

74. Upupa epops, Linn.

The Hoopoe was seen in August throughout the Pamir, where it probably breeds.

75. Tichodroma muraria, Linn.

The Wall-Creeper was sometimes seen on the Pamir, where it probably breeds. It was obtained in the Kysil-art defile at the beginning of September.

76. Iynx torquilla, Linn.

The Wryneck was found in the grass in the middle of August at Rankul during migration.

77. Cuculus canorus, Linn.

The Cuckoo passed on migration through the Bash-Alai and the Pamir in August.

78. Columba rupestris, Pall.

Pallas's Rock-Dove was observed in July in the Bash-Alai, and in August near the Kara-kul.

79. Turtur auritus.

The Turtle Dove passed on migration at the end of August, and was constantly seen between Ali-chur and Kara-kul.

80. Turtur ferrago, Eversm.

The West-Siberian Turtle Dove passes on migration through the Pamir during September. Young ones were killed in the Bash-Alai in the middle of that month.

81. Syrrhaptes tibetanus, Gould.

The Tibetan Sand-Grouse is common enough throughout the Pamir, where it breeds. Fledgelings were seen in the middle of August. This bird ascends as high as 14,000 feet. It was not seen on the Alai.

+ 82. Coturnix communis, Bonn.

The Quail was seen near Ran-kul on the 29th August, and was obtained near the river Ak-su on the 12th September.

83. Tetraogallus himalayensis, Gray.

The Himalayan Snow-Cock is called "Ullar" by the Kirghiz. It lives on the rocky mountains of the Pamir, and was seen in summer between Lake Kara-kul and the Aksu river, near the limit of perpetual snow, where it breeds. No specimen was obtained; so the identification may not be correct; this bird may be the *T. tibetanus* of Gould. On the North Alai range, and on all the other mountains surrounding Ferghana, and also throughout the whole Tian-shan system, the only Snow-Cock is *T. himalayensis*.

84. Scolopax gallinago (Linn.).

The Common Snipe was seen on the 24th August near Ran-kul before the migrating-season. It occasionally breeds on the Pamir.

85. Ardea cinerea, Linn.

The Common Heron was observed at the end of August flying near the Pamir-Alichur.

86. Ardetta minuta (Linn.).

The Little Bittern was seen on the 20th September during migration in the Kysil-art gorge.

87. Otis macqueeni, Gray.

On the 17th September I killed a female Macqueen's Bustard sitting on an ancient moraine near Lake Kara-kul. It only passes through the Pamir.

88. Otis tetrax, Linn.

The Little Bustard was seen on the 21st September in the Bash-Alai near the Kysil-art gorge. It is only met with on migration.

+ 89. Charadrius mongolicus, Pall.

The Short-billed Sand-Plover breeds on the Alai, and on the Pamir, where it is more common; it lives in the brook-swamps near rivers and lakes, and is particularly common near Kara-kul and Ran-kul at 12,000 to 13,000 feet, where it breeds. At the commencement of August the old birds gathered into flocks and departed, leaving the young behind; and by the 7th September they too had disappeared.

Besides the Pamir (with the Alai steppe) I know only the following summer haunts of *C. mongolicus*, viz.:—the southern parts of Trans-Baikalian Siberia, near the Mongolian border on the rivers Oxus and Argun, where it was found by Pallas, Radde, and Dybowsky; and the mouth of the river Uda, in the Sea of Ockotsk, where it was found by Middendorff in summer, but not breeding. It was not obtained by Prjevalsky in Southern Mongolia, nor on Lake Khu-khu-nor; and it is also wanting in the collections made by the expeditions of M. Potanon and Col. Pevtzov in West Mongolia, where, however, it may be occasionally found.

90. ÆGIALITIS CANTIANA (Lath.).

Æ. alexandrina, Hasselq., var. *dealbata*, Swinhoe.

The Kentish Plover was scarce on the Pamir in August, during migration. One female was obtained there, and also in Ferghana, where it breeds. I observed and collected in Ferghana the true *Æ. cantiana*, and a closely allied form, which I took for its eastern representative, *Æ. dealbata* *.

They differ in the dark markings behind the eye. On comparing two of Swinhoe's original specimens of *Æ. dealbata*, determined by himself, with some of *Æ. cantiana* in my collection from France, the Caspian coast, the Aral Sea, and Ferghana, I found these markings identical in both forms, and the true *Æ. dealbata* differing only in its larger bill, larger white tips on the greater wing-coverts, and a more narrow and crescent-shaped black patch between the white forehead and the rufous crown; but this last character varies in *Æ. cantiana* itself.

---

* In my Russian text, written and printed at Tashkent, without the necessary works of reference, this eastern representative is misnamed *Æ. placida*, instead of *Æ. dealbata*; but the true *Æ. placida* is more closely allied to *Æ. hiaticula* and *Æ. fluviatilis* than to *Æ. cantiana*, whereas the Ferghana bird, misnamed by me *Æ. placida*, only slightly differs from *Æ. cantiana*, and very much from *Æ. fluviatilis*.

From France to the Aral Sea the specimens I have compared are identical; but a Ferghana specimen (I have not yet compared all), in its bill, great coverts, and fronto-coronal patch, is intermediate between the western *Æ. cantiana* and the true *Æ. dealbata,* which hardly deserves specific distinction.

91. CHETTUSIA GREGARIA, Pallas.

An example of the Sociable Plover was killed on September 23rd on the Bash-Alai, during southerly migration.

+92. HÆMATOPUS OSTRALEGUS, Linn.

The Oystercatcher was seen at the end of August on the Pamir-Alichur, near the Boolma-kul, during migration.

93. LIMOSA MELANURA, Leisl.

Black-tailed Godwits were seen flying over the Pamir-Alichur during migration at the end of August.

94. TEREKIA CINEREA, Gmel.

The Terek Sandpiper was obtained during migration near Tashil-kul on the 5th of September, and near Kara-kul on the 18th September. It is a regular visitant to the Pamir in small parties during the time of migration, unlike the last, which can only be considered a straggler.

+95. TOTANUS GLOTTIS, Bechst.

The Greenshank passes the summer and breeds on the Pamir; but scarcely any specimens of young were obtained.

96. TOTANUS CALIDRIS (Linn.).

The Redshank breeds on the Pamir along the rivers and lakes below 13,000 feet. It is especially numerous near Ran-kul.

+97. TOTANUS OCHROPUS (Linn.).

The Green Sandpiper is common in summer everywhere on the Alai and Pamir, where it breeds.

98. TOTANUS GLAREOLA (Linn.).

The Green Sandpiper breeds throughout the Alai and Pamir, and is especially numerous near Ran-kul.

99. Totanus hypoleucus, Linn.

The Common Sandpiper breeds in great numbers on the Bash-Alai, on brook-swamps along rivers.

+100. Tringa pugnax, Linn.

The Ruff was numerous in August near the Kara-kul and Ran-kul lakes, and was obtained on the Alichur at the commencement of that month with remains of the breeding-plumage. At the end of the month only young were seen. It probably breeds on the Pamir.

+101. Tringa subarquata, Güld.

Curlew-Sandpipers were observed in the Pamir in July, in their breeding-plumage, which they throw off in August, and then migrate, the young only being left. They probably breed there, because the other northern *Limicolæ* do not pass through earlier than the end of August.

+102. Tringa alpina, Linn.

The Dunlin migrates through the Pamir about the beginning of September.

103. Tringa minuta, Leisl.

The Little Stint is found throughout August in the Pamir. After the 16th many young birds were observed, but whether bred there or not I cannot say.

104. Tringa temmincki, Leisl.

Temminck's Stint was very numerous, and was seen everywhere on the Alai at the end of July and on the Pamir throughout August. It breeds there.

105. Tringa platyrhyncha, Temm.

One specimen of the Broad-billed Sandpiper was collected at Kara-kul on August 17th, before the migration-season—perhaps a single bird which had passed the summer there.

+106. Phalaropus hyperboreus (Linn.).

The Red-necked Phalarope was obtained during migration in the Pamir Alichur on September 8th, and near Kara-kul on September 17th.

107. Phalaropus fulicarius (Linn.).

The Grey Phalarope was obtained with the last species near Kara-kul. Perhaps it is only a straggler; for it is rare.

108. Anser indicus, Gmel.

The Bar-headed Goose breeds on the brook-swamps near all the lakes in the Pamir, and was also found near the rivers Ak-su and Alichur. The young in down were seen at the beginning of August. As soon as the young are fully feathered the old birds moult. They are most numerous near Ran-kul, where the Cossacks escorting the expedition killed with sticks more than fifty moulting Geese in one swamp.

109. Tadorna tadorna (Linn.).

One specimen only of the Common Sheldrake was seen on the Katir-kul, between Kara-kul and the Kysil-art, and nowhere else on the Pamir lakes.

110. Tadorna casarca, Linn.

The Ruddy Sheldrake is numerous on all the Pamir lakes. It assembles in troops at the end of August, and was then seen in large numbers on the Sari-kul. Only young specimens were collected; the old birds were too wary. It breeds on the Pamir.

111. Anas acuta, Linn.

The Pintail breeds near all the lakes in the Pamir. It is not very common, but is often shot from the end of July to the end of September.

112. Anas circia, Linn.

The distribution of the Garganey is like that of the Pintail; but it is more numerous on rivers.

113. Anas crecca, Linn.

The Teal probably breeds here. Except *Anas tadorna,* no Ducks are abundant on the Pamir.

114. Anas clypeata, Linn.

The Shoveller also probably breeds in the Pamir.

115. FULIGULA CRISTATA (Leach).

The Tufted Duck was seen at the end of July on the Kara-kul; so it must breed there; but it is rare in the Pamir.

116. FULIGULA NYROCA, Güld.

The White-eyed Duck is a resident in Ferghana, where it breeds. It probably also breeds on the Pamir lakes.

+117. MERGUS ALBELLUS (Linn.).

The Smew was seen, but not shot, on the Boolum-kul in the Pamir-Alichur at the end of August. It probably breeds here. With the help of a binocular glass a pair was minutely examined on the lake at some 200 yards distance from the shore. I clearly distinguished the thin Mergus-like bill, and also its plumage.

+118. PHALACROCORAX CARBO, Linn.

The Cormorant was seen on the Kara-kul at the end of July; and a specimen was obtained on the Taschil-kul at the end of August in fresh breeding-plumage, which proved that it was a single bird.

119. LARUS CACHINNANS, Pallas.

Many specimens of the Mediterranean Herring-Gull were seen on the Tashil-kul at the end of August. A young one was shot. They probably pass the summer and breed there.

120. LARUS BRUNNEICEPHALUS, Jerdon.

Some specimens of the Brown-headed Gull were obtained on the Kara-kul at the end of July. This Gull breeds on the Pamir lakes. At the end of August it had just assumed its winter plumage.

+121. STERNA HIRUNDO, Linn., nec Dresser.

The Common Tern is more frequent than the Brown-headed Gull, and found on all the lakes and rivers of the Pamir, where it breeds.

In conclusion, it may be remarked that the avifauna of the Pamir presents almost the same character as that of the mammals, only perhaps with a greater mixture of Tibetan and Mongolian types, unobserved on the Tian-shan tablelands, such as *Syrrhaptes tibetanus, Charadrius mongolicus, Larus brunneicephalus*. Two other species, viz. *Otocorys elwesi* and *Budytes calcarata,* are very numerous in Western Tibet, in the Pamir, and in the Alai, and are found also, though not so common, in the Tian-shan tablelands. We may also remark that the steppe-types of the ornithological fauna of Bash-Alai and Pamir, viz. *Otocorys elwesi, Saxicola isabellina, S. deserti, Syrrhaptes tibetanus, Charadrius mongolicus,* and *Tadorna casarca,* are also found in Tibet. But of these steppe-types only the two species of *Saxicola* and *Tadorna casarca* are common to the Pamir and Aral-Caspian steppe, the *Saxicolæ* even ranging into the northern Sahara, while the remaining species, though belonging to the most characteristic genera of the desert avifauna, are peculiar to the tablelands of high Asia, where they represent closely allied species of the lower hot deserts. Thus, instead of *Carpodacus mongolicus,* peculiar to the highlands of Asia, we have the closely allied *C. githagineus* of Sahara, Syria, and Persia, and instead of *Otocorys elwesi,* we have *O. brandti* in the Aral-Caspian steppe and *O. bilopha* in the Sahara. In these genera the steppe-species, especially those of *Otocorys,* are near relatives to those living in the tablelands of the Pamir and Tian-shan. Greater differences exist between *Syrrhaptes tibetanus* and *S. paradoxus* of the steppe, and between *Charadrius mongolicus* and *C. caspius.*

We can see from the enumeration of the Pamir birds peculiar to the steppes, that they only constitute a small part of its avifauna, their number amounting to only one eighth of all the species which breed there, or seven out of fifty-four species. The greater part of the Pamir avifauna consists of Central-Asiatic alpine species, mostly land-birds, and of species which are widely spread over the whole Palæarctic region. These last are mostly Waders and Palmipedes.

The greater part of the northern birds belonging to the polar tundras are only seen in the Pamir during the time of migration, and are not common.

The fauna of the Pamir and that of high Asia in general is far from being a repetition of the polar fauna; it only bears some resemblance to it in the large proportion of Waders and Palmipedes among the breeding-birds of these heights. On the Pamir there are 23 Waders and Palmipedes out of 54 breeding species—that is, 43 per cent.; while the Turkestan fauna gives less than 20 per cent. of breeding Waders and Palmipedes. In the polar countries, if we exclude the sea-birds proper, we find the following percentages, viz. in the southern part of the Taimur peninsula, on the Boganida (a continental locality), 36 out of 52, or 69 per cent., and further north on the river Taimir, as much as 80 per cent.

Besides the few species that belong properly to the polar tundras, a considerable number of the generally spread Palæarctic species of the Pamir spread far north into the polar subregion; such are *Falco tinnunculus, Saxicola œnanthe, Totanus glareola, Tringa pugnax, Scolopax gallinago, Anas acuta.* These six species breed more or less generally throughout the whole country between the Pamir and Northern Siberia. Five of these (with the three polar species above mentioned, eight) breed on the Pamir as well as in Northern Siberia, and one (*Falco tinnunculus*) appears in summer in both localities but does not breed.

Eighty-five per cent. of the species breeding in the Pamir do not extend to the polar tundras, though the climate of the Pamir does not differ much from that of the polar region, judging by the number of days with frost. There is, indeed, if any thing, a rougher climate on the Pamir in summer, owing to its frosty nights, its low latitude depriving it of the unsetting polar sun. Though very differently composed, the fauna of the Pamir bears a highly arctic stamp, there being about the same number of breeding species, viz. 54 on the Pamir and 52 on the Boganida; but more additions are to be expected to the list of Pamir birds than to that of the Boganida made by Middendorff.

In the Pamir there are 54 species that remain to breed to 65 that do not.

The following birds, though generally distributed over the high alpine zone of Turkestan above the limits of the alpine woods, were not found on the Pamir, viz.:—

1. Vultur monachus (*a*).
2. Athene plumipes.
3. Pyrrhocorax alpinus (*n*).
4. Acanthis fringillirostris (*n*).
5. —— brevirostris (*n*).
6. Fringilla montifringilla (*t*).
7. Fringillauda altaica (*a*).
8. Emberiza passerina, *Pall.*
9. Alauda arvensis (*t*).
10. Budytes citreola.
11. —— citreoloides.
12. —— melanocephala (*t*).
13. Motacilla alba (*t*).
14. Accentor rufilatus, *Sev.*
15. Phylloscopus indicus (*t*).
16. —— superciliosus (*t*).
17. Ruticilla erythronota (*t*).
18. Saxicola vittata (*t*).
19. Cinclus leucogaster (*n*).
20. Lanius homeyeri (*t*).
21. Chelidon lagopoda*.
22. Perdix barbata (*a*).
23. Caccabis chukar (*a*).
24. —— hyemalis (*a*).
25. Grus cinerea. Yulduz.
26. —— virgo. Yulduz.
27. Charadrius geoffroyi.
28. Anas strepera.
29. Fuligula rufina.
30. Mergus merganser (*a*).
31. Larus ridibundus (*n*).

The sign (*n*) indicates bird breeding, the sign (*a*) indicates bird not breeding, on these heights, but lower in the mountains, and ascending after the breeding-season in July. The letter (*t*) indicates birds only found in migration.

All together 152 species have been found up to the present time in the high alpine regions of Tian-shan and the Pamir, of which 65 species breed there. Of these species 31 are not found in the Pamir; but I have given a list of them in order to complete the high alpine avifauna of inner Asia. As the distribution of these 31 birds is mostly local, the Pamir avifauna may still be increased by many of them, and may, besides, receive other additions; and so I give no list of the birds observed only on Pamir and not on the corresponding heights of the Tian-shan system, of which I could name 30 species or more. This great difference in the avifaunas, however, is only apparent: they are certainly different; but the difference is inconsiderable, and it would be premature to draw any conclusions upon the subject. Many birds that are common to the Pamir and the

---

* Found in Yulduz and determined by Col. Prjevalsky. This species breeds in Mongolia, north-east of Yulduz.

Tian-shan were, for instance, found in only one locality in that range, although they may occur in twenty; again, in Tian-shan some species were found in only one spot, whereas they probably occur in many others. There are still wide tracts of country unexplored between our routes.

As regards the upper alpine region of the Pamir and Tian-shan we have also insufficient observations, these only having been made in June as to breeding birds, and in September as to migratory species. As to the range of the alpine Pamir birds into Western Tibet, I have here[*] only the paper by Dr. Scully[†] on the avifauna of Eastern Turkestan, where he also enumerates the birds found on his way thither and back. I extract from this paper the following list of the birds observed by Dr. Scully between Leh and Yarkand along the road by the Karakorum Pass, on heights not below 10,000 feet, north of Ladakh, also on the road to Kitschik-yailak.

1. Vultur monachus.
2. Gypaetus barbatus (P).
3. Milvus melanotis.
4. Falco tinnunculus (P).
5. Circus swainsoni.
6. Corvus tibetanus (P).
7. Pica leucoptera (P).
8. Pyrrhocorax alpinus.
9. —— graculus (P).
10. Podoces humilis.
11. Parus cyaneus.
12. Leptopœcile sophiæ.
13. Carpodacus rubicilla.
14. —— erythrinus (P).
15. Linota brevirostris.
16. Leucosticte hæmatopygia.
17. Passer indicus.
18. Montifringilla adamsi.
19. Calandrella brachydactyla (P).
20. Otocorys penicillata (P).
21. Accentor fulvescens (P).
22. Motacilla personata (P).
23. Budytes citreola.
24. Phylloscopus tristis[‡].
25. Phylloscopus viridanus (P).
26. Sylvia curruca (P).
27. Ruticilla semirufa (rufiventris, *V.*) (P).
28. —— erythrogastra (P).
29. Saxicola œnanthe[§] (P).
30. —— deserti (P).
31. Motacilla saxatilis (P).
32. Cotile rupestris (P).
33. Upupa epops (P).

---

[*] At Tashkend, April 1879.

[†] S. F. vol. iv. pp. 44–205.

[‡] The small dimensions of this bird given by Dr. Scully induce me to think that it is *P. sindhicus*, Brooks, found in Turkestan as well as *P. tristis*.

[§] Scully saw it only once, during migration.

34. Coracias garrula[*].
35. Columba rupestris[†] (P).
36. Caccabis chukar.
37. Tetraogallus tibetanus.
38. —— himalayanus (P).
39. Crex porzana[‡].
40. Gallinago solitaria.
41. Ardea cinerea (P).
42. Ægialitis fluviatilis.
43. Totanus glottis (P).
44. —— calidris (P).
45. —— ochropus (P).
46. Actitis hypoleucus (P).
47. Querquedula crecca (P).
48. Sterna fluviatilis (P).

All the above are common to the Pamir and Tian-shan, except *Podoces humilis* and *Leucosticte hæmatopygia* (which is replaced by my *L. pamirensis*). About *Montifringilla adamsi* and *Megaloperdix tibetana* my observations were not conclusive. The remaining 44 are all found in Turkestan.

A more complete catalogue could now be compiled for Western Tibet by adding to the above list those of Drs. Henderson and Stoliczka and Capt. Biddulph; but this would scarcely make any change in the above given brief general idea of the ornithological affinity between West Tibet, the Pamir, and Tian-shan. We could add some few species found on the Ladakh-Yarkand roads, and wanting in Turkestan, as *Carpodacus stoliczkæ*, Hume; but then we should also add many more species common to these roads and Russian Turkestan, as *Otocorys elwesi, Falco hendersoni*, &c.

In this list of the West-Tibetan birds the letter (P) designates the species found in the Pamir. We see that the Central-Asian ornithological district (to which belong Tian-shan and the Pamir) spreads to the south-east, and includes North-western Tibet as far as the right bank of the Upper Indus. The eastern limit cannot now be fixed, because the interior of Eastern Tibet is not yet explored. It may be remarked that some forms proper to Tibet were not found by Dr. Scully on his way, but extend to the west and north-west of it as far as Karakul; such, for instance, are *Syrrhaptes tibetanus, Larus brunneicephalus*, and others above mentioned.

The Mammal-faunas have different limits; and that of Tibet is markedly different from that of Pamir, as can even be observed from Scully's incomplete observations. He speaks of only four mammals; and two of them were not observed in Turkestan, viz. a wild sheep peculiar to Tibet and West China (*Ovis nahoor*), and an antelope (*Kemas hodgsoni*)*. The other two mammals of Western Tibet probably also range into the Pamir; they are a marmot (*Arctomys*, sp.) and a hare (*Lepus*, sp.) with a bluish grey rump.

---

[*] In Tibet as a straggler.

[†] *C. rupicola*, apud Scully.

[‡] *Porzana maruetta*, apud Scully.

V.—*Notes on the earliest available Scientific Name for the Woodchat Shrike.* By Howard Saunders, F.Z.S.

Mr. Seebohm and I have had occasion to examine the synonymy of the Woodchat Shrike, with the following result:—

The name most frequently employed until late years is *Lanius rufus*, Brisson (Orn. ii. p. 147); but Brisson's name, although correctly applied, antedates the ornithological era 1766, and is therefore not available. *Lanius rufus*, Linn. Syst. Nat. i. p. 137 (1766), is avowedly based upon *Lanius madagascarensis rufus*, Briss. Orn. ii. p. 178, a Madagascar bird; so that is out of the question. On turning to Mr. H. E. Dresser's 'Birds of Europe' for information, the first name on the list (iii. p. 147) is *Lanius auriculatus*, "Müll. Syst. Nat. Suppl. p. 71 (1766)" [sic]. These citations for title and date, given by Messrs. Sharpe and Dresser (for they were partners in this article), are both erroneous: the former should be "Müller, Natursyst [ems] Suppl. p. 71;" and the proper date is 1776. But the godfather of this name appears to be Professor Newton, who, in his 4th edition of Yarrell's Brit. Birds, i. p. 215, employs the name *L. auriculatus*, P. L. S. Müller, giving, it is almost needless to say, the correct reference. The question, however, is whether the bird so named by Müller is the Woodchat?

An examination of the second volume of Müller's 'Natursystem' shows that he only distinguished two species of

---

* Perhaps this is the straight-horned Ras mentioned by Wood on the authority of the inhabitants as occurring in the Pamir.